wherein the second beam splitter layer is interposed between the second and third transparent substrate layers.

**4**. The electronic device defined in claim **2**, further comprising:

a third beam splitter layer embedded in the waveguide, wherein the third beam splitter layer is formed on the first transparent substrate layer and is laterally displaced from the first beam splitter layer.

**5**. The electronic device defined in claim **1**, wherein the second beam splitter layer completely overlaps the first beam splitter layer.

**6**. The electronic device defined in claim **1**, further comprising:

a third beam splitter layer embedded in the waveguide, wherein the third beam splitter layer at least partially overlaps the second beam splitter layer.

**7**. The electronic device defined in claim **5**, wherein the third beam splitter layer completely overlaps the second beam splitter layer.

**8**. The electronic device defined in claim **6**, wherein the first beam splitter layer completely overlaps the first and second beam splitter layers.

**9**. The electronic device defined in claim **1**, wherein the first and second beam splitter layers each comprise a metallic coating.

**10**. The electronic device defined in claim **1**, wherein the first and second beam splitter layers each comprise a dielectric coating.

**11**. The electronic device defined in claim **1**, wherein the first and second beam splitter layers each comprise a surface hologram.

**12**. The electronic device defined in claim **1**, wherein the first beam splitter layer has opposing first and second ends, a first reflection coefficient at the first end, and a second reflection coefficient at the second end that is different than the first reflection coefficient.

**13**. The electronic device defined in claim **12**, wherein the first reflection coefficient is greater than the second reflection coefficient.

**14**. The electronic device defined in claim **13**, wherein the first beam splitter layer comprises a first region having the first reflection coefficient, a second region having the second reflection coefficient, and a third region having a third reflection coefficient that is less than the first reflection coefficient and greater than the second reflection coefficient, the third region being interposed between the first and second regions.

**15**. The electronic device defined in claim **13**, wherein the first beam splitter layer has a continuously variable reflection coefficient that varies from the first reflection coefficient at the first end to the second reflection coefficient at the second end.

**16**. The electronic device defined in claim **1**, wherein the waveguide has a lateral area and the first and second beam splitter layers are configured to reflect the image light in two dimensions across the lateral area.

**17**. A head mounted device comprising:

a display configured to emit image light;

a waveguide configured to convey the image light emitted by the display, wherein the waveguide comprises:

a first substrate layer having a first index of refraction,

a second substrate layer mounted to the first substrate layer and having a second index of refraction, and

a third substrate layer mounted to the second substrate layer and having a third index of refraction, wherein a first interface between the first and second substrate layers and a second interface between the second and third substrate layers are each configured to reflect at least some of the image light at least once as reflected light and are each configured to transmit at least some of the image light; and

an output coupler configured to couple the reflected light out of the waveguide.

**18**. The head mounted device defined in claim **17**, wherein the second substrate layer comprises a volume hologram having a bulk index of refraction equal to the second index of refraction.

**19**. The head mounted display defined in claim **17**, wherein the second substrate layer has a lateral area and the second index of refraction varies across the lateral area.

**20**. A head mounted display comprising:

a display configured to emit image light;

a waveguide configured to convey the image light emitted by the display, wherein the waveguide comprises:

a first substrate layer,

a thick volume hologram layer mounted to the first substrate layer, wherein the thick volume hologram layer has a thickness, and

a third substrate layer mounted to the thick volume hologram layer, wherein the thick volume hologram layer is configured to partially reflect the image light at a plurality of depths relative to the first substrate layer as the image light traverses the thickness of the thick volume hologram layer; and

an output coupler configured to couple the reflected image light out of the waveguide.

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